



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,066	02/03/2006	Takashi Izumi	L9289.06110	9528
52989	7590	02/24/2009	EXAMINER	
Dickinson Wright PLLC James E. Ledbetter, Esq. International Square 1875 Eye Street, N.W., Suite 1200 Washington, DC 20006			SAFAIPOUR, BOBBAK	
			ART UNIT	PAPER NUMBER
			2618	
			MAIL DATE	DELIVERY MODE
			02/24/2009	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/567,066	<b>Applicant(s)</b> IZUMI ET AL.	
	<b>Examiner</b> BOBBAK SAFAIPOUR	<b>Art Unit</b> 2618	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8 is/are rejected.
- 7) ☒ Claim(s) 6 and 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>02/03/2006</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

The information disclosure statement submitted on 02/03/2006 has been considered by the Examiner and made of record in the application file.

### ***Claim Objections***

**Claim 1** is objected to because of the following informalities:

On lines 8-9 of claim 1, “with said reference signal” is repeated twice.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1-5 and 8** rejected under 35 U.S.C. 102(e) as being anticipated by **Maruta (EP 1 389 837)**.

Art Unit: 2618

Consider **claim 1**, Maruta discloses an array antenna reception apparatus (title; array antenna transmitter/receiver) comprising:

a reference signal generation section that generates a reference signal only when a reception level of a received signal is equal to or lower than a threshold (paragraph 12; calibration means for multiplexing a calibration signal lower in power than a user transmission signal or a user reception signal on the user transmission signal);

a plurality of reception sections that multiplex said reference signal with said received signal (figure 4: 20-1 to 20-n; multiplexing/demultiplexing circuit);

an error calculation section that compares the received signal multiplexed with said reference signal to calculate an error of said received signal in each of said reception sections (paragraph 13; generating a calibration signal that detects a difference between an original calibration signal and the calibration signal having passed through the radio transmission/reception units); and

a received signal processing section that corrects said received signal based on the calculated error of said received signal (paragraph 13; generating amplitude/phase information which is correction in accordance with amplitude/phase fluctuations generated in the radio transmission/reception units).

Consider **claim 8**, Maruta discloses a received signal calibration method (title; array antenna transmitter/receiver) comprising:

a measuring step of measuring a power level of a received signal (paragraphs 12 and 16);

a reference signal generation step of generating a reference signal only when the measured power level of said received signal is equal to or lower than a threshold (paragraph 12; calibration means for multiplexing a calibration signal lower in power than a user transmission signal or a user reception signal on the user transmission signal);

a multiplexing step of multiplexing said reference signal with said received signal (figure 4: 20-1 to 20-n; multiplexing/demultiplexing circuit);

an error calculation step of calculating an error of said received signal caused by signal processing on said received signal by comparing the power level of said received signal multiplexed with said reference signal with the power level of said reference signal (paragraph 13; generating a calibration signal that detects a difference between an original calibration signal and the calibration signal having passed through the radio transmission/reception units); and

a received signal processing step of correcting said received signal based on the calculated error of said received signal (paragraph 13; generating amplitude/phase information which is correction in accordance with amplitude/phase fluctuations generated in the radio transmission/reception units).

Consider **claim 2**, Maruta discloses the claimed invention wherein a selection section that selects said reception section that extracts said received signal from among said plurality of reception sections (figure 4; radio reception unit 32-1 and 32-n); and

a calibration reception section that provides said received signal extracted by said selection section to said error calculation section as a calibration signal (figure 4; calibration signal generation and detection unit; 81 and 82),

Art Unit: 2618

wherein said reference signal generation section provides said reference signal generated to said calibration reception section (paragraph 12), and

said calibration reception section multiplexes said provided reference signal with said received signal and provides the multiplexed signal to said error calculation section (figure 4: 20-1 to 20-n; multiplexing/demultiplexing circuit).

Consider **claim 3**, Maruta discloses the claimed invention wherein a power ratio calculation section that calculates a ratio of a power level of said reference signal to noise in said received signal multiplexed with said reference signal and adjusts the power level of said reference signal according to the calculated power level ratio (paragraph 12; calibration means for multiplexing a calibration signal lower in power than a user transmission signal or a user reception signal on the user transmission signal).

Consider **claim 4**, Maruta discloses the claimed invention wherein said power ratio calculation section calculates a power level ratio of said reference signal to said noise for each user and adjusts the power level of said reference signal according to the calculated power level ratio (paragraph 12; calibration means for multiplexing a calibration signal lower in power than a user transmission signal or a user reception signal on the user transmission signal).

Consider **claim 5**, Maruta discloses the claimed invention wherein a selection section that selects said reception section that extracts said received signal from said plurality of reception sections (figure 4; radio reception unit 32-1 and 32-n);

a calibration reception section that provides said received signal extracted by said selection section to said error calculation section as a calibration signal (figure 4; calibration signal generation and detection unit; 81 and 82); and

a switching section that connects any one of said calibration reception section and said reference signal generation section to said selection section (figure 4; calibration signal transmission/reception unit 70).

*Allowable Subject Matter*

**Claims 6 and 7** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Consider **claim 6**, the best prior art of record found during the examination of the present application, **Maruta (EP 1 389 837)**, fails to specifically disclose, teach, or suggest a selection section that selects said reception section that extracts said received signal from among said plurality of reception sections; and a calibration reception section that provides said received signal extracted by said selection section to said error calculation section as a calibration signal, wherein said reception sections each comprise a directivity coupler provided with an input terminal, a terminal having directivity with respect to said input terminal, a terminal having opposite directivity with respect to said input terminal and a terminal having no directivity with respect to said input terminal, and when said received signal is input to said input terminal of said directivity coupler, said calibration reception section is connected to the terminal having directivity with respect to said input terminal via said selection section, said reference signal is

Art Unit: 2618

input to the terminal having opposite directivity with respect to said input terminal and said received signal processing section is connected to the terminal having no directivity with respect to said input terminal.

Consider **claim 7**, the best prior art of record found during the examination of the present application, **Maruta (EP 1 389 837)**, fails to specifically disclose, teach, or suggest a selection section that selects said reception section that extracts said received signal from among said plurality of reception sections; and a calibration reception section that provides said received signal extracted by said selection section to said error calculation section as a calibration signal, wherein said reception sections each comprise two directivity couplers provided with an input terminal, a terminal having directivity with respect to said input terminal, a terminal having opposite directivity with respect to said input terminal and a terminal having no directivity with respect to said input terminal, when said received signal is input to said input terminal of one said directivity coupler, said calibration reception section is connected to the terminal having directivity with respect to said input terminal via said selection section, a terminal end is connected to the terminal having opposite directivity with respect to said input terminal and an input terminal of said directivity coupler is connected to the terminal having no directivity with respect to said input terminal, and a terminal end is connected to the terminal having directivity with respect to said input terminal of said other directivity coupler, said reference signal is input to the terminal having opposite directivity with respect to said input terminal and said received signal processing section is connected to the terminal having no directivity with respect to said input terminal.



***Conclusion***

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**Hand-delivered responses** should be brought to

Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Bobbak Safaipoor whose telephone number is (571) 270-1092. The Examiner can normally be reached on Monday-Friday from 9:00am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Matthew Anderson can be reached on (571) 272-4177. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR

Art Unit: 2618

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Bobbak Safaipoor  
B.S./bs

February 16, 2008

/Matthew D. Anderson/

Supervisory Patent Examiner, Art Unit 2618